

We use PHP and a tool inside it called GD Library to make and work with images.

## 1. What is GD Library?

- GD is a built-in tool in PHP that helps to create images, draw shapes, write text, and save images.
- You can make images like .png, .jpg, .gif etc.

Before starting, check that GD is ON in PHP.

In xampp, it usually is ON by default

How to Create a Simple Image

```
php

<?php

// create a blank image of 400 x 200 pixels
$image = imagecreatetruecolor(400, 200);

// create some colors
$white = imagecolorallocate($image, 255, 255, 255); // white
$black = imagecolorallocate($image, 0, 0, 0);           // black
$blue  = imagecolorallocate($image, 0, 102, 204);        // blue

// Step 3: Fill background with white
imagefilledrectangle($image, 0, 0, 400, 300, $white);

// Step 4: Draw a Line
imageline($image, 20, 20, 380, 20, $red);
```

```
// Step 7: Tell browser it's an image
header("Content-Type: image/png");

// Step 8: Show the image
imagepng($image);

// Step 9: Free memory
imagedestroy($image);
?>
```

```
<?php  
// Set the content type to image  
header('Content-Type: image/png');  
  
// Create a blank image (width: 400, height: 200)  
$image = imagecreatetruecolor(400, 200);  
  
// Allocate background and line colors  
$backgroundColor = imagecolorallocate($image, 255, 255, 255); // white  
$lineColor = imagecolorallocate($image, 255, 0, 0); // red
```

```
imageline($image, 50, 50, 350, 150, $lineColor);
```

```
// Output the image  
imagepng($image);
```

```
// Clean up  
imagedestroy($image);  
?>
```

## How It Works:

- `imageline($image, x1, y1, x2, y2, $color);`  
Draws a line from (x1, y1) to (x2, y2).

## 1. What is Computer Graphics in PHP?

In PHP, **Computer Graphics** means **creating, drawing, or editing images dynamically using code**.

PHP can generate graphics such as:

- Simple shapes (lines, circles, rectangles)
- Text on images
- Charts or watermarks
- Captcha images

### Drawing Shapes in PHP

```
<?php  
header("Content-Type: image/png");  
  
$image = imagecreatetruecolor(400, 250);  
  
$white = imagecolorallocate($image, 255, 255, 255);  
$red = imagecolorallocate($image, 255, 0, 0);  
$blue = imagecolorallocate($image, 0, 0, 255);  
  
imagefill($image, 0, 0, $white);
```

```
imagerectangle($image, 50, 50, 350, 200, $red);

// Draw Line
imageline($image, 50, 50, 350, 200, $blue);

// Draw filled ellipse
imagefilledellipse($image, 200, 125, 100, 60, $blue);

imagepng($image);
imagedestroy($image);
?>
```